UCRL-JC-124885 Abs

Abstract Submitted
for the DPP96 Meeting of
The American Physical Society

Sorting Category: 4.8 (experimental)

Temperature measurements of shock compressed liquid D_2* G. W. COLLINS, K. S. BUDIL, R. CAUBLE, P. CELLIERS, L. B. DA SILVA, N. HOLMES, R. WALLACE, S. DIXIT, B. A. HAMMEL, J. D. KILKENNY, Lawrence Livermore National Laboratory, A. NG, University of British Columbia — We will present preliminary temperature measurements of shock-compressed liquid D_2 in the temperature range of 0.5-3 eV and the pressure range of 1-3 Mbar. A single beam of Nova, smoothed with a kinoform phase plate, is used to generate a shock, first into a $100 - 250$ μm thick aluminum pusher and ultimately into liquid D_2. We determine the in-flight shocked D_2 color temperature and emissivity by measuring the spectral radiance at several discrete wavelengths and fitting the data to a gray body. We will compare these results to recent lower temperature and pressure gas gun measurements.
*Work performed under the auspices of the U. S. Department of Energy by the Lawrence Livermore National Laboratory under contract number W-7405-ENG-48.

☐ Prefer Oral Session
☒ Prefer Poster Session

G. W. Collins
collins7@llnl.gov
Lawrence Livermore National Laboratory

Date submitted: July 9, 1996 Electronic form version 1.1